REMARKS

Claims 1-50, all the claims pending in the application, stand rejected on prior art grounds. Applicants respectfully traverse these rejections based on the following discussion.

I. The 35 U.S.C. 112, second paragraph Rejection

Claims 7, 14, 21, 28, 35, 42 and 49 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7, 14, 21, 28 35, 42 and 49 have been amended, and as such, the rejection has been overcome.

II. The Prior Art Rejections

Claims 1-6, 8-13, 15-20, 22-27, 29-34, 36-41, 43-48 and 50 stand rejected under 35 U.S.C. §102(b) as being anticipated by Reiner et al. (U.S. Patent No. 6,289,334), hereinafter referred to as Reiner. Claims 7, 14, 21, 28, 35, 42 and 49 stand rejected under 35 U.S.C. § 103(a) as being unpatentable under Reiner in view of Jagadish et al. (U.S. Patent No. 7,010,522), hereinafter referred to as Jagadish. Applicants respectfully traverse these rejections based on the following discussion.

A. The 35 U.S.C. 102(b) Rejection Based on Reiner

1. The Disclosure of Reiner

Reiner teaches a system for database query processing by means of "query decomposition" which intercepts database queries prior to processing by a database management system ("DBMS"). Reiner teaches an apparatus and method for decomposing a query, which only lives for a finite duration, into multiple sub-queries so that these sub-queries can be executed in parallel by a database system running on a computer system equipped with multiple processors. The end result is the set of database records that satisfy the query after combining the sub-results from the sub-queries. Note After the result records are found, the query ceases to exist. Even though the word "index" is also used by Reiner, it is an index into the database records, like a B-tree, which is typically used in database system for fast retrieval of records. Such "data index" differs from the "query index" of the invention of the present claims.

2. Reiner Fails to Teach the Invention of the Claims.

The claimed invention, as provided in amended independent claims 1, 9, 16, 23, 30, 37 and 44 contain features, which are patentably distinguishable from the prior art references of record. Specifically, these claims have been amended to incorporate the limitations of now cancelled claim 5 wherein all of said groups of the virtual construct intervals within the query index have the same pattern of different sized virtual construct intervals.

Reiner et al. fails to teach and every aspect of Applicants' invention. The Examiner points to column 4, lines 34-37 and column 25, lines 39-40 as teaching that all of the groups of the virtual construct intervals with the query index, have the same patterns of different sized of virtual construct intervals. In column 4, lines 34-37, Reiner discloses "where stored records have previously been indexed by the indexing element with respect to the same fields (columns) used by the hashing element." In column 5, lines 39-40, Reiner discloses: "partition skew is defined as a distribution of data that results in unequal-sized partitions."

Neither cited reference teaches the claimed limitation that all of said groups of the virtual construct intervals within the query index have the same pattern of different sized virtual construct intervals. Even assuming, that Reiner's definition of partition skew is interpreted to mean different sized virtual construct intervals, it fails to fully meet the limitation of the claims which states that the pattern of different sized virtual constructs between all the groups of virtual construct intervals is the same. Therefore, the disclosure of Reiner fails to teach or imply the limitations of the claims as amended.

Moreover, Applicants invention differs from the teachings of Reiner generally discussed above because the Applicants' invention relates to creating and maintaining a "query index." The query index is an index of "continual" queries, rules, profiles and subscriptions, where each continual query, rule, profile or subscription contains at least one interval predicate. These queries are continual, long-lived queries. Rather than finding database records for a given query like Reiner, the end result of the invention of the pending claims is finding all the continual queries, rules, profiles or subscriptions that

match a given event, condition, or publication. There are many queries and the invention finds the queries matching a given event, which is opposite to the method of Reiner, where there are many database records and they are trying to find the records that satisfy a given query. Reiner decomposes a query into multiple sub-queries so that they can be executed in parallel by a DBMS running on a multiprocessor system. In the present invention, the continual queries are decomposed into one or more predefined, virtual construct intervals, so that the query IDs can be properly indexed for fast matching of a given event. In Reiner's decomposition, there is no notion of predefining a set of virtual construct intervals for decomposition. Hence, Reiner's fails to teach the invention of the instant claims.

B. The 35 U.S.C. 103(a) Rejection over Reiner in view of Jagadish

1. The disclosure of Jagadish

Jagadish relates to methods for finding a set of strings, stored in the database that approximately substring-matches a given query string. The method disclosed by Jagadish is approximate substring indexing, which is accomplished by decomposing each string in the database into overlapping "positional q-grams," sequences of a predetermined length q, and containing information regarding the position of each q-gram within the string. There is no notion of virtual construct intervals, as presently claimed by Applicants, for decomposing continual query intervals.

2. Jagadish Fails to Teach the Invention of the Claims.

As shown above, Reiner does not teach that all of said groups of the virtual construct intervals within the query index have the same pattern of different sized virtual construct intervals. Jagadish is referenced, by the Examiner, for the limited purpose of teaching insertion of predicate interval into the largest available virtual construct feature. Jagadish is not referenced by the Examiner for teaching that all of said groups of the virtual construct intervals within the query index have the same pattern of different sized virtual construct intervals, and does not teach this limitation. Thus, no combination of Reiner and Jagadish would teach the invention defined by the independent claims 1, 9, 16, 23, 30, 37 and 44. Claims 7, 14, 21, 28, 35, 42 and 49 depend from these claims and are patentable by virtue of this dependency and because of the additional features they define and in view of the amendment to these claims made pursuant to the Examiner's rejection under 35 U.S.C. 112, second paragraph.

Moreover, the Applicants note that all claims are properly supported in the specification and accompanying drawings, and no new matter is being added. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

III. Formal Matters and Conclusion

With respect to the rejections to the claims, the claims have been amended, above, to overcome these rejections. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections to the claims.

In view of the foregoing, Applicants submit that claims 1-50, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 50-0510.

Respectfully submitted,

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